I. Locator Information:
Instructor: Dr. Bidisha Bose-Basu
Office Location: SciTec311
Office Phone: (910) 672 1052
Office hours (email appointments are encouraged):

Course: CHEM 225 Organic Chemistry II - Lecture
Semester Credit Hours: 4
Day and Time Class Meets:

Total Contact Hours for Class: 15 wks × 200 min/wk = 50 hours (lecture)

Prerequisite: Undergraduate level CHEM 223 Minimum Grade of C
Email address: bbosebas@uncfsu.edu Email correspondence encouraged for faster response

FSU Policy on Electronic Mail: Fayetteville State University provides to each student, free of charge, an electronic mail account (username@broncos.uncfsu.edu) that is easily accessible via the Internet. The university has established FSU email as the primary mode of correspondence between university officials and enrolled students. Inquiries and requests from students pertaining to academic records, grades, bills, financial aid, and other matters of a confidential nature must be submitted via FSU email. Inquiries or requests from personal email accounts are not assured a response. The university maintains open-use computer laboratories throughout the campus that can be used to access electronic mail.

Rules and regulations governing the use of FSU email may be found at http://www.uncfsu.edu/PDFs/EmailPolicyFinal.pdf

II. Course Description:
A course investigating the nomenclature, synthesis, reactions and reaction mechanism, and methods for analysis of functionally substituted organic compounds with laboratory activities extending the topics started in CHEM 223 and emphasizing syntheses and technical writing.

Prerequisites: CHEM 223 and 224 with a grade of “C” or higher in the course. Corequisites: CHEM 226.

III. Disabled Student Services:
In accordance with Section 504 of the 1973 Rehabilitation Act and the Americans with Disabilities Act (ACA) of 1990, if you have a disability or think you have a disability to please contact the Center for Personal Development in the Spaulding Building, Room 155 (1st Floor); 910-672-1203, as early in the semester (preferably within the first week) as possible.

IV. Textbook & other Course Requirements:
3. ONLINE HW: Sapling Learning http://www.saplinglearning.com

V. Learning Outcomes:
The instructional goals of this course are to provide the student with: Concepts and higher-level skills (i.e., analysis, synthesis, and evaluation) necessary for additional study in organic chemistry (e.g. CHEM 225) through both active and passive learning. Opportunities exist in which one can develop technical communication (both oral and written) skills. The personal computer will be used for desk-top publishing, as tool for active learning through experiments in molecular modeling involving configurational analysis, conformational analysis, reaction pathways involving both transition states and intermediates, and analysis of vibrational and electronic spectra, and training and practice in browsing the web, as well as uploading from the web.

Upon successful completion of this course, students will be able to:
1. **DEMONSTRATE A THOROUGH KNOWLEDGE OF THE FOLLOWING CONCEPTS FROM ORGANIC CHEMISTRY I (a course prerequisite)**
   - Nucleophilic substitution reactions
   - Alkane, alkene and alkyl halide nomenclature
   - Synthesis of alkenes and alkyl halides
   - Stereochemistry

2. **DEMONSTRATE KNOWLEDGE OF THE SYSTEMIC (IUPAC) AND COMMON RULES FOR NOMENCLATURE OF BENZENE DERIVATIVES, ALCOHOLS, ALDEHYDES, KETONES, CARBOXYLIC ACID, CARBOXYLIC ACID DERIVATIVES AND AMINES.**
   - Deduce either common or systematic (IUPAC) names when a structure is given
   - Translate names between the two systems
   - Construct structures when either of the types of names is given.

3. **DEMONSTRATE AN UNDERSTANDING OF THE PRINCIPLES OF ELECTROPHILIC AROMATIC SUBSTITUTION.**
   - Identity the different types of electrophilic aromatic substitution reactions.
   - Identity substituents that act as ortho/para or meta directors
   - Understand the mechanism of the electrophilic aromatic substitution reaction.

4. **DEMONSTRATE KNOWLEDGE OF THE REACTIONS THAT ALCOHOLS AND CARBONYL CONTAINING COMPOUNDS UNDERGO.**
   - Predict the gross structural changes expected in the several types of reactions described.
   - Predict the appropriate regiochemistry and stereochemistry expected when these types of information are appropriate.
   - Predict reagents and any special conditions required to carry out a reaction when reactants and products are both known.
   - Design multi-step reaction schemes for the preparation of given products.
   - Utilize an understanding of the mechanisms of chemical reactions in order to predict the relative rate (and/or) relative populations of the various products when two (or more) possible reactions are expected to occur simultaneously.

5. **DEMONSTRATE THE ABILITY TO INTERPRET SPECTRA.**
   - Understand the basis of Mass Spectroscopy, Infrared spectroscopy, and Nuclear Magnetic Resonance Spectroscopy.
   - Commit a number of the typical vibrational frequencies (in infrared spectroscopy) to memory.
   - Understand the relationship between transition states in chemical reactions and imaginary vibrations along reaction coordinates.
   - Understand factors that affect the chemical shifts of $^1$H and $^{13}$C atoms.
   - Predict the spin-spin splitting pattern for $^1$H and $^{13}$C atoms.
   - Interpret the various types of spectra for unknown compounds and derive the structure of the unknown compound from the spectrum (or combination of spectra).

VI. **Course Requirements and Evaluation Criteria** - The final letter grade will be assigned according to University Catalog:

**A. GRADING SCALE:**

<table>
<thead>
<tr>
<th>Percentile Points</th>
<th>Letter Grade</th>
<th>Accomplishment</th>
</tr>
</thead>
<tbody>
<tr>
<td>90 - 100%</td>
<td>A</td>
<td>Excellent</td>
</tr>
<tr>
<td>80 - 89.9%</td>
<td>B</td>
<td>Proficient</td>
</tr>
<tr>
<td>70 - 79.9%</td>
<td>C</td>
<td>Acceptable</td>
</tr>
<tr>
<td>60 - 69.9%</td>
<td>D</td>
<td>Poor</td>
</tr>
<tr>
<td>below 59.9%</td>
<td>F</td>
<td>Unacceptable</td>
</tr>
</tbody>
</table>

**FN = Failing due to non-attendance**

**B. INTERIM GRADES:**
Interim grades will be assigned from the first week of the semester until the deadline for class withdrawals. Interim grades are used for informational and warning purposes only; they are not part of your permanent transcript and have no effect on your grade-point average (GPA). In accordance with university policy, the following changes have been implemented:

**Please note: there are no longer WN grades!**

WN (withdrawal due to non-attendance) grades have been discontinued. This means that it is the student’s responsibility to withdraw from classes prior to the published deadline.

Final grade FN (failure due to non-attendance). This final grade is assigned to students who are on a class roster, but who never attend the class. An FN grade is equivalent to an F grade and adversely affects your GPA.

Interim Grade X (No-show). This grade is assigned to students who are on a class roster, but who never attend class. If you have an X grade, either begin attending class or withdraw from it. If you do not take action in response to an X grade, you will receive a final grade of FN.

Interim Grade EA (Excessive Absences). This grade is assigned to students whose class absences exceed 10% of the total contact hours. If you have an EA grade, you are in jeopardy of failure if you do not take immediate actions. Either resume attending the class or withdraw from it.

NOTE: X, EA, FN are the part of Early Alert System.

**CASSIGNMENTS:**

Graded Assignments – Three tests, homework, experiments will be used to determine student’s final grade.

The progress of each student will be evaluated ONLY by means of three hour examinations, a final examination and homework assignments. The final grade will be determined by performances as outlined below:

<table>
<thead>
<tr>
<th>Component</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Three one-hour exams</td>
<td>50%</td>
</tr>
<tr>
<td>Homework (online &amp; ACS)</td>
<td>25%</td>
</tr>
<tr>
<td>ACS Final Exam (comprehensive)</td>
<td>25%</td>
</tr>
</tbody>
</table>

The final exam date will be posted on University registrar’s website and announced in class. Final Exam for Graduating Seniors - Inform me ahead of time if you are graduating.

**D. DROP DEADLINE:**

No student will be allowed to drop the class after the official university drop deadline listed in the Academic Calendar, 2013-2014, which is Friday Mar 28, 2014 for this term. If a student stops attending class after this date, they will receive a final grade of FN (failure due to non-attendance). An FN grade is equivalent to an F grade in the calculation of your grade-point average (GPA).

**E. ATTENDANCE REQUIREMENTS:**

Students are expected to arrive to class on time, remain in class until dismissed by the instructor, and refrain from preparing to leave class until it is dismissed. Attend all lectures, except in cases of illness and other unforeseen emergencies including “military related functions”. It is the student’s responsibility to make up any and all missed work. The university policy concerning absences from class will be strictly enforced. Active attendance is expected of every student at all classes and exams. More than FOUR unexcused absences will result in the loss of one letter grade in the final semester grade.

**F. POLICY ON MISSED OR LATE ASSIGNMENTS:**

It is the student’s responsibility to make up any and all missed work in cases of medical demands or “military related” functions. Students are expected to take examinations on the scheduled dates. Missing an exam will require a written medical or supervisor excuse. Keep in mind that all homework and written lab reports must be submitted within a specified time frame (for labs, one week at the latest after lab exercise) in order to be accepted and graded. Late submission will NOT be graded. There will be no make-up for any optional tests administered.

Please note: If these evaluation criteria must be revised because of extraordinary circumstances, the instructor will distribute a written amendment to the syllabus.

**G. OTHER STUDENT EXPECTATIONS:**

The instructor will respect all students and will make every effort to maintain a classroom climate that promotes learning for all students. Students must accept their responsibility for maintaining a positive classroom environment by abiding by the following rules:

1. Students who are expected and presumed to have met the prerequisites for this course.
2. Each student must work towards an understanding of the material discussed in class and the textbook, including the basic language of chemistry, chemical concepts and principles, and applying chemical principles to solving chemistry-related problems. (Note that you are expected to be familiar with many concepts introduced in General Chemistry.)
3. Each student is expected to read the assigned chapters in the textbook. This will help in understanding key concepts and learning necessary factual material. Due to time constraints, it is not possible to cover each topic fully in lecture. Students are responsible for reading the text to fill in the details that are not covered specifically during class meetings.
4. **NO CELL PHONES, iPADS, iPOD, Laptop or any other electronic gadgets can be used in class.**
ALL ELECTRONIC gadgets need to be switched off!!

Students not obeying any of the rules in this syllabus will be asked to leave the class immediately!

Students are expected to refrain from disruptive behavior during class. Such behavior is rude and may cause you or those around you to miss an important point or announcement made in class.

5. Participate actively in classroom discussions and activities.
6. Take examinations at the scheduled dates and times.
7. Refrain from participating in all forms of academic misconduct (see below)

H. FSU POLICY ON DISRUPTIVE BEHAVIOR IN THE CLASSROOM:

FSU Policy on Disruptive Behavior in the Classroom
The Code of the University of North Carolina (of which FSU is a constituent institution) and the FSU Code of Student Conduct affirm that all students have the right to receive instruction without interference from other students who disrupt classes.

FSU Core Curriculum Learning Outcome under Ethics and Civic Engagement (6.03): All students will “prepare themselves for responsible citizenship by fulfilling roles and responsibilities associated with membership in various organizations.” Each classroom is a mini-community. Students learn and demonstrate responsible citizenship by abiding by the rules of classroom behavior and respecting the rights all members of the class.

The FSU Policy on Disruptive Behavior (see FSU website for complete policy) identifies the following behaviors as disruptive:

1. **Failure to respect** the rights of other students to express their viewpoints by behaviors such as repeatedly interrupting others while they speak, using profanity and/or disrespectful names or labels for others, ridiculing others for their viewpoints, and other similar behaviors;
2. Excessive **talking** to other students while the faculty member or other students are presenting information or expressing their viewpoints.
3. **Use of cell phones** and other electronic devices
4. **Overt inattentiveness** (sleeping, reading newspapers)
5. **Eating in class** (except as permitted by the faculty member)
6. Threats or statements that jeopardize the safety of the student and others
7. **Failure to follow reasonable requests of faculty members**
8. **Entering class late or leaving class early** on regular basis
9. Students will not pass notes or carry on **private conversations** while class is being conducted.
10. Students are not permitted to sleep in class, or be in laboratory without proper attire and safety goggles.

A student found cheating during exams may be dismissed from exam room and assigned an overall grade of an F in the course.

**Consequences for Failing to Meet Behavioral Expectations:**
The instructor may take the following actions in response to disruptive behavior. Students should recognize that refusing to comply with reasonable requests from the faculty member is another incidence of disruptive behavior.

1. Direct student to cease disruptive behavior.
2. Direct student to **change seating** locations.
3. Require student to have **individual conference** with faculty member. At his meeting the faculty member will explain the consequences of continued disruptive behavior.
4. Dismiss class for the remainder of the period. (Must be reported to department chair.)
5. **Lower** the student’s final exam by a maximum of **one-letter grade**.
6. File a complaint with the Dean of Students for more **severe disciplinary action**.

Students who believe the faculty member has unfairly applied the policy to them may make an appeal with the faculty member’s department chair.

I. **ACADEMIC MISCONDUCT:**
As members of an academic community, each student is expected to preserve his or her personal integrity by refraining from all forms of academic dishonesty. Academic fraud includes, but is not limited to, the following:
1. Copying answers on an exam, quiz, homework assignment, or laboratory assignment from another student.
2. Plagiarism of written work, including laboratory reports, from the textbook, internet webpage, laboratory manual, or other published work.
3. Using notes or a crib sheet on an exam or quiz without the consent of the instructor. This includes writing notes on any part of your body.
4. Asking another student for help or answers during an exam, or providing such help to another student.
5. Having another person take an exam or quiz for you.
6. Stealing or having in one’s possession without permission a copy of an exam or quiz generated by the instructor prior to its administration.

Evidence of cheating, in any form, on an exam or quiz will result in an "F" (0 points). Any student caught cheating more than once could face more severe disciplinary measures, including expulsion from the university, in accordance with university policies as outlined under Disciplinary System and Procedures in the Fayetteville State University Student Handbook. The handbook may be obtained from the Office of Student Affairs located in the Collins Admin Building.

**VII. Academic Support Resources**

Academic support resources available for this class at Center for Promoting STEM Education & Research (CPSER) in Lyons Science Annex. Registration contact: Ms. Haskins, [http://www.uncfsu.edu/cpscr](http://www.uncfsu.edu/cpscr) / Programs like ISAS, OpTIMUM, RISE, NCLSAMP, FICAM, McNair offers free tutoring services. Students need to contact the program coordinators independently and sign-up. Tutoring slots are limited, so early registration is encouraged.

The University College Learning Center in the H.T. Chick Building in Room 216 C is available to assist students with writing, mathematics, and reading comprehension. Students needing extra help must sign-up for Student Support services for tutoring.

Additional textbooks related to the course are available in the FSU Library.

FSU strongly encourages students to utilize Criterion and Smarthinking, the online resources with tutoring in writing, math, biology, chemistry, physics, economics, accounting, statistics and Spanish. Visit Smarthinking Student Site at [http://blackboard.uncfsu.edu](http://blackboard.uncfsu.edu)

**Blackboard Site:** [http://blackboard.uncfsu.edu](http://blackboard.uncfsu.edu)

**VIII. Course Outline and Assignment Schedule**

The following is a tentative outline of topics to be covered in CHEM225 this semester. Note that due to time constraints, we will not be able to cover each topic fully in lecture. However, you are responsible for reading the text to fill in the details that are not covered specifically during class meetings.

We will study 11 chapters in this course starting from Chapter 1. For your convenience, we’ll cover them in the order in which they are found in the text. Students are responsible to keep abreast of any and all changes to the schedule.

<table>
<thead>
<tr>
<th>Week #</th>
<th>Topic</th>
<th>Chapter</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Introduction</td>
<td>12</td>
</tr>
<tr>
<td>2</td>
<td>Mass and Infrared Spectroscopy</td>
<td>Review 6, 7</td>
</tr>
<tr>
<td>3</td>
<td>Interim grade (X, EA, F, FN) period begins</td>
<td></td>
</tr>
<tr>
<td>Jan 20</td>
<td><strong>MLK day</strong></td>
<td>Holiday</td>
</tr>
<tr>
<td>4</td>
<td>Alcohol &amp; Phenols</td>
<td>17</td>
</tr>
<tr>
<td>5</td>
<td>Aldehydes &amp; Ketones</td>
<td>19</td>
</tr>
<tr>
<td>6, 7</td>
<td>Carboxylic Acids</td>
<td>20</td>
</tr>
<tr>
<td>Mar 8-16</td>
<td>Break Week</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>Carbonyl</td>
<td>21</td>
</tr>
<tr>
<td>9</td>
<td></td>
<td>22</td>
</tr>
<tr>
<td>Mar 28</td>
<td><strong>Last day to withdraw</strong></td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>Carbonyl</td>
<td>23</td>
</tr>
<tr>
<td>11</td>
<td></td>
<td>23</td>
</tr>
<tr>
<td>12</td>
<td>Benzene</td>
<td>15</td>
</tr>
<tr>
<td>Apr 18</td>
<td><strong>Spring Holiday</strong></td>
<td>Holiday</td>
</tr>
<tr>
<td>13</td>
<td>Chemistry of Benzene, Conjugated compounds</td>
<td>16</td>
</tr>
<tr>
<td>14</td>
<td></td>
<td>14</td>
</tr>
<tr>
<td>15, 16</td>
<td>Elimination Reactions</td>
<td>11</td>
</tr>
<tr>
<td>Apr 25</td>
<td><strong>Last day to withdraw from university (WU)</strong></td>
<td></td>
</tr>
<tr>
<td>17</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Apr 28</td>
<td><strong>Final Exams for Graduating Seniors Begin</strong></td>
<td>(inform me ahead of time if you are graduating)</td>
</tr>
<tr>
<td>May 2</td>
<td><strong>Last class day</strong></td>
<td></td>
</tr>
<tr>
<td>May 3-9</td>
<td>Final Exam (Cumulative)</td>
<td></td>
</tr>
</tbody>
</table>
Tentative Exam Dates: Watch for in-class/email/Blackboard for exam and other announcements.

<table>
<thead>
<tr>
<th>Test #</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Test # 1</td>
<td>Feb 6</td>
</tr>
<tr>
<td>Test # 2</td>
<td>Mar 4 (Mid-term)</td>
</tr>
<tr>
<td>Test # 3</td>
<td>Mar 31</td>
</tr>
<tr>
<td>Test # 4</td>
<td>Apr 24</td>
</tr>
<tr>
<td>Final Exam</td>
<td>Final Exam week</td>
</tr>
</tbody>
</table>

IX. Teaching Strategies: The primary means of instruction will be through instructor-led formal lectures & assignments, and discussions. To accommodate different student learning styles, the instructor will utilize both auditory and visual aids, such as Powerpoint© presentations, conventional blackboard recitations, and practical demonstrations that illustrate the application of theoretical concepts. To assist in presenting abstract material, the instructor will utilize computer visualization to increase the students’ understanding and problem-solving skills. The students are encouraged to participate in in-class, group problem-solving discussions to challenge their creativity, analytical, and logical reasoning skills. However, students are encouraged for class-participation, without disrupting the class. Students should set-up appointments for individual needs (too many interruptions will affect the teaching, hence the instructor reserves right to limit it) related to the course during my office hours (email appointments are encouraged).

X. Bibliography

XI. Disclaimer:
To accommodate emergent circumstances, the professor reserves the right to make reasonable changes in the syllabus while the course is in progress. Any understandings between a student and the professor including, but not limited to, changes, expectations, or modifications to course requirements or procedures must be in writing and must be signed by both parties. Any question of interpretation of course requirements or of understandings between a student and the professor will be at the discretion of the professor.

Plagiarism: Plagiarism is any use of another person’s words or ideas without giving proper credit to the person from whom you borrowed the words or ideas. Plagiarism is the theft of intellectual property. Plagiarism includes the following:
- Failing to cite properly any direct or indirect quotation(s) from professionally written materials (books, journal articles, etc.) student papers, projects, presentations, etc.
- Submitting as your own work a paper, project, or presentation that you did not compose (that is, write, compile, draw, etc.)
- Allowing another person to write your paper or develop your presentation or assignment.
Students who plagiarize will be subject to failing the assignment and/or failing the course.

Turnitin.com: “Turnitin.com” is a web-based service that provides online reviews of written material to judge if it has been copied from another source. Turnitin.com is used to evaluate the possibility of a student plagiarizing or cheating on written material. The instructor may require students to submit written work in an electronic format for the purpose of utilizing the Turnitin.com service.

Additional Information:
Disclaimer: To accommodate emergent circumstances, the professor reserves the right to make reasonable changes in the syllabus while the course is in progress.
RECEIPT OF SYLLABUS briefing: CHEM 225- Spr 2014

Students,
Read, sign the following, if you have received the in-class briefing and/or a copy (electronic/paper) of Chem225 syllabus.

Dr. Bose

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RECEIPT OF SYLLABUS CHEM 225- Spr 2014

I,________ ____________________________, HAVE READ and UNDERSTOOD the CHEM225 syllabus discussed at the first day of class. I have given a electronic copy (on Blackboard) of this course syllabus, which details instructor’s office hours, the course outline, the methods for determining course grade, and lists required materials I am responsible for purchasing.

SIGNATURE /ELECTRONIC SIGNATURE _ ______________
Date________________________
BANNER ID#___________________

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